



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/925,798	08/09/2001	Edward C. Douglas	RTN2-019AUS	5368

22494 7590 07/17/2002

DALY, CROWLEY & MOFFORD, LLP  
SUITE 101  
275 TURNPIKE STREET  
CANTON, MA 02021-2310

EXAMINER

CHAMBLISS, ALONZO

ART UNIT	PAPER NUMBER
----------	--------------

2827

DATE MAILED: 07/17/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/925,798

Applicant(s)

DOUGLAS, EDWARD C.

Examiner

Alonzo Chambliss

Art Unit

2827

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 4/18/02 (amendment B filed on 8/9/01).
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 12, 14, 17 and 18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 12, 14, 17 and 18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 April 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

### DETAILED ACTION

1. Amendment B filed on 4/18/02 has been fully considered and made of record in Paper No. 8.

### *Response to Arguments*

2. Applicant takes the position that to form a plurality of sites in a lead frame is not a duplication of parts and therefore has patentable significance. The applicant states that *In re Harza*, deals with a block having a plurality of ribs and the prior art had one rib. Also, the applicant states that the court found no patentable significance to having additional ribs, over the prior art, absent an unexpected result. Using the applicant's example a block having a plurality of ribs (i.e. applicant's invention of a lead frame having a plurality of sites) and the prior art (i.e. Brathwaite having a lead frame with one site. Therefore, the duplication of a plurality of sites in a lead frame does not patentably distinguish from the claimed process of Brathwaite.

Applicant alleges that Brathwaite et al. in view of Rosenstock both fail to disclose a lead frame with a plurality of sites and then places the chip on sites of the lead frame and then merely places covers over the chips prior to their separation. This argument is respectfully deemed to be unpersuasive because the claims are not so limited in scope since the claims do not recite the language "and then" and "prior to separation".

### *Claim Rejections - 35 USC § 112*

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

Art Unit: 2827

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

4. Claims 17 and 18 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. In claim 17, the phrase " a portion of the bottom surface affixed to a top surface portion of the lead frame by the adhesive material " is vague and indefinite since it is confusing because the adhesive used in this attachment step is different from the adhesive in the affixing step between the lead frame and the base.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 12 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brathwaite et al. (U.S. 5,455,386) in view of Rosenstock (WO 94/17552).

With respect to Claim 11, Brathwaite discloses a lead frame 74 having electrical leads extending outwardly from an inner region of the lead frame 74. A base section 52 is adhesively affixed to the lead frame by adhesive 66 with portion of the electrical leads 84 extending outwardly from the base 52 (see Fig. 2). The base 52 is made of plastic (see col. 1 lines 23-25). Electrical wires 80 are connected between the chip 51 and the

Art Unit: 2827

electrical leads 84 to be packaged in the electronic package 50. A cover 54 is affixed to the base section by adhesive 66, wherein the cover 54 has a cavity 78 for accommodating the chip 51 (see Fig. 2).

Brathwaite does not explicitly disclose a lead frame having a plurality of sites, wherein each site has electrical leads affixed to a base section, electrical wires between the chip and the electrical leads, and a cover with a cavity to encapsulated the each chip that is adhesively affixed to the base section. However, with respect to Claim 12, Brathwaite as stated above discloses all of the elements in one lead frame site including lead frame 24 (see col. 3 lines 1-30; Fig. 30). To form a plurality of sites each containing electrical leads affixed to a base section, electrical wires between the chip and the electrical leads, and a cover with a cavity to encapsulated the each chip that is adhesively affixed to the base section instead of just one would be obvious to one skill in the art at the time, since in the absent of new and unexpected results duplicating parts is obvious. The court held that mere duplication of parts has no patentable significance unless a new and unexpected result is produced. *In re Harza*, 274 F. 2d 669, 124 USPQ 378 (CCPA 1960). Therefore, the duplication of a plurality of sites does not patentably distinguish from the claimed process of Brathwaite.

Brathwaite discloses an aperture in the base 52 for registering with the chip 51 (see Fig. 2). Brathwaite fails to disclose electrically connecting a conductive member (i.e. inner portions of a lead frame) to base section to a bottom ground plane conductor of the chip with an dielectric material between the lead frame and the conductive member. However, with respect to Claim 14, Rosenstock discloses electrically

Art Unit: 2827

connecting a conductive member (i.e. base plate 71) to base section 65 to a bottom ground plane conductor of the chip 70 with an dielectric material 74 is between the lead frame and the conductive member 71 (see English abstract and Figs. 3a-3c).

Therefore, it would have been obvious to incorporate the ground plane conductor of the chip with an dielectric material between the lead frame and the conductive member with process of Brathwaite, since the package would offer a low inductance ground path, good thermal characteristics , and low parasitic inductance and capacitance as taught by Rosenstock.

### ***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 17 and 18, insofar as being definite, are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamanaka (U.S. 5,998,862).

With respect to Claim 17, Yamanaka discloses an electrically conductive lead frame 24 having electrical leads 24a extending outwardly from an inner region, an adhesive material 42 (i.e. epoxy resin), and a base section 41 having a top surface (see Figs. 6C, 6D). A portion of the top surface is affixed to a bottom surface portion of the lead frame 24 with the adhesive material 42 and to portions of the electrical leads 24b extending outwardly from the base section 41. A plastic cover 45 is provided over the

Art Unit: 2827

base section 41, wherein the plastic cover 45 has a bottom surface with a portion of the bottom surface affixed to a top surface portion of the lead frame 24 by an adhesive 32, 51 (see Figs. 6E-6G). The base section 41 and the cover 45 being configured to provide a cavity when the cover 45 and the base section 41 are affixed with the integrated circuit chip 44 being encapsulated within the provided cavity (see Figs. 6F, 6G).

Yamanaka does not explicitly disclose during the affixing of the cover to the lead frame, the adhesive material extending into the cavity along a first direction and is confined within outer surface of sidewalls of such cover along an opposite direction by inner surfaces of the sidewalls of such cover. However, since the Yamanaka discloses filling the gap formed between the cover 45 and lead frame 24 with epoxy low-temperature setting adhesive agent 51. One skilled in the art would readily recognize that the adhesive material would extend into the cavity along the first direction and is confined within outer surface of sidewalls of such cover along an opposite direction by inner surfaces of the sidewalls of such cover, since a force would be applied to the lid forcing the adhesive material into the cavity creating a bond between the cover and the lead frame before a curing process takes place. Therefore, it would have been obvious to one skilled in that the adhesive material would extend into the cavity of the cover taught by Yamanaka, since a force would be applied to the lid forcing the adhesive material into the cavity creating a bond between the cover and the lead frame before a curing process takes place.

Yamanaka discloses a cover 45 provided with a recess 33 disposed with the sidewalls and wherein during the affixing the ends of the sidewalls are affixed to the base section 41 with the recess being in each one of the ends of the sidewalls. The recess 33 having bottom surface and a rear surface to hold the adhesive material 32 allowing a portion of the adhesive material to extend beyond the bottom surface into the cavity along a first direction while the rear surface of such recess retains such adhesive material 32 within the sidewalls of the cover 45 as such material is urged along an opposite direction (see col. 10 lines 20-34; Fig. 6F).

With respect to Claim 18, Yamanaka discloses a cover 45 with a ridge disposed along ends of sidewalls of the cover 45 and including disposing the adhesive material 32 in the ridge between the cover 45 and the lead frame 24 to affix the cover 45 to the lead frame (see col. 10 lines 20-34; Fig. 6F).

The prior art made of record and not relied upon is cited primarily to show the process of the instant invention.

### ***Conclusion***

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

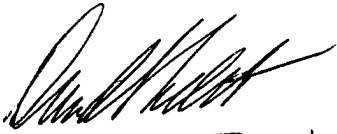
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the



Art Unit: 2827

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning the communication or earlier communications from the examiner should be directed to Alonzo Chambliss whose telephone number is (703) 306-9143. The fax phone number for this Group is (703) 308-7722 or 7724. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-7956.



DAVID L. TALBOTT  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800

AC  
AC/July 13, 2002